2009 Louisiana Annual Network Assessment

Louisiana Department of Environmental Quality
Office of Environmental Assessment
Air Quality Assessment Division

May 30, 2009

The Louisiana Department of Environmental Quality's (LDEQ) Air Analysis section has operated State and Local Ambient Monitoring Stations (SLAMS), Photochemical Assessment Monitoring Stations (PAMS), Special Purpose Monitoring Stations (SPMS), and a proposed National Core Network (NCore) Ambient Air Monitoring Station as a requirement of the Code of Federal Regulations (CFR), Title 40, Part 58. These stations measure ambient air concentrations of those pollutants for which standards have been established in 40 CFR Part 50. Data acquired from the stations are submitted into the EPA's Air Quality System (AQS) where it is judged against the National Ambient Air Quality Standards (NAAQS). Access to this information is available through EPA's website (www.epa.gov). Conformance of the network to Appendix D (Network Design Criteria) and Appendix E (Probe and Path Siting Criteria) is determined using an Annual Review of the air quality surveillance system which states are required to provide for in 40 CFR 58.10. The location for this ruling is available in Docket ID No. EPA-HQ-OAR-2004-0018 in the http://www.regulations.gov index. The review is also used to ensure that the network is continuing to meet the objectives of the air monitoring program. The three basic objectives of the air monitoring program are follows:

1. Provide air pollution data to general public in a timely manner. Data can be presented to the public in a number of attractive ways including through air quality maps, newspapers, internet sites, and as a part of weather forecasts and public advisories.
2. Support compliance with ambient air quality standards and emissions strategy development. Data from the monitors for National Ambient Air Quality Standards (NAAQS) pollutants will be used for comparing an area's air pollution levels against the NAAQS. Data of various types can be used in the development of attainment and maintenance plans. Data can also be used to track trends in air pollution abatement control measures impact on improving air quality. In monitoring locations near major air pollution sources, source-oriented monitoring data can provide insight into how well industrial sources are controlling their pollutant emissions.
3. Support for air pollution research studies such as health effects assessments.

This review has several goals:

- Determine if the network should be modified to continue to meet its monitoring objective and data needs (through termination of existing stations, relocation of stations, or establishment of new stations); and
- Investigate ways to improve the network to ensure that it provides adequate, representative, and useful air quality data.

Monitoring Plans for July 2009-June 2010

Under EPA's proposed NCore design guidelines, the state of Louisiana is required to operate one NCore level 2 site, which will be the Capitol site. The remaining sites in the state will all be PAMS, SLAMS, STN, or SPMs. Table A summarizes number and type of monitors located in each MSA population. Table B lists specific information about analytes monitored at each site and which MSA is covered by this location. Finally, Table C lists information regarding the PAMS network.

The PAMS network plan exceeds the minimum monitoring requirements. Currently Capitol, Pride, and Bayou Plaquemine are currently PAMS sites. Dutchtown was added as an additional PAMS site because it measured the highest ozone value in the state.

Additional proposed changes to the current Network are numerous and are as follows:

- SO_2 – Two monitor locations will be discontinued (Shreveport and Monroe) by the end of 2009 due to very low historical sulfur dioxide concentrations.
- NOy - An additional monitor (Capitol) will be added in 2010.
- O_3 – The ozone monitor currently located at Chalmette High School will be moved to Meraux.
- PM_{10} – Two sites will be relocated (Shreveport Calumet will move to Shreveport Airport and Port Allen will move to Capitol) these monitors are manual but will be converted to continuous, and Chalmette Vista will become a continuous sampling monitor. Also additional continuous monitors will be added at City Park and Lafayette USGS and the continuous PM2.5 monitor at Pride will be changed to a continuous PM10 monitor thus bringing the number of PM10 monitors in the network to six continuous monitors.
- $PM_{2.5}$ – Three Federal Reference Method (FRM) samplers will be discontinued (Baker, Lafayette Police Troop, and Bayou Plaquemine); and three additional continuous samplers will be added by October 30, 2009, one each, at Alexandria, Monroe, and Lafayette USGS. The FRM sampler at Alexandria will be move about one mile to have room to collocate with the continuous PM2.5 sampler being added.
- Pb – Based on 2007 Louisiana EI data, two source-based locations will be established for the Exide (3.26 tpy) and Bayou Steele (1.49 tpy) facilities by January 1, 2010 to meet new Network Design Standards for lead sources. LDEQ will perform modeling to determine the maximum concentrations for these facilities and locate monitors appropriately. If modeling shows ambient air concentrations to be less than 50% of the NAAQS, LDEQ will ask for a waiver from monitoring requirements. Population-based sites are planned for 2011 in the New Orleans and Baton Rouge areas. DEQ will work with EPA regarding the location of these sites. The samples from these monitors will be analyzed using EPA Method 200.7(Inductively Coupled Plasma-Atomic Emission Spectrometric Method) as previously approved for Louisiana.
- Upper Air Component – LDEQ is planning to purchase a ceilometer to fulfill the upper air component. The manufacturer is working to develop an algorithm to determine mixing heights.

- Forecasting – Five additional areas (Lake Charles, Thibodaux, Lafayette, Alexandria, and Monroe) will be added to the current forecast program to increase the program to eight areas in total.
- VOC – Additional Volatile Organic Carbon samples will be collected at Dutchtown during the ozone season as of May 1, 2009. The additional samples will be 4 three-hour samples every day.
- NO_x, Speciation, and CO sites will remain unaltered in the 2009/2010 plan.

In the 2008 Network Assessment Plan, we discussed discontinuing the Hydrogen Sulfide and Sulfur Dioxide monitors at the Chalmette High School and Algiers sites in St. Bernard Parish. These were special purpose monitors originally scheduled to run from May 2006 - May 2007. These monitors all show low concentrations, with the highest at only one third of the NAAQS. The Algiers site was shut down in September of 2008 in preparation for Hurricane Gustav. The site was not reactivated after this storm. Chalmette High School has continued to operate throughout the year.

In the event of projected budget cuts for fiscal year 2009/2010, LDEQ and EPA will work closely to minimize the impact of the cuts and to ensure continued public health.

Table A.

MSA/CSA Population[1]	MSA	Number of Monitors Currently Required	Number of Existing Monitors	Proposed Network
1,000,000-4,000,000	*New Orleans*			
	Ozone	2	4	4
	Nitrogen Oxide	0	1	1
	Sulfur Dioxide	0	3	3
	Carbon Monoxide	0	0	0
	PM2.5 FRM	2	3	3
	PM2.5 continuous	1	4	4
	PM10	2-4	1	2
	Lead	0	0	0
350,000-1,000,000	*Baton Rouge*			
	Ozone	4	10	10
	Nitrogen Oxide	3	10	10
	Trace Level Nitrogen Oxide	2	1	2
	Sulfur Dioxide	0	1	1
	Trace Level Sulfur Dioxide	1	1	1
	PM2.5 FRM	2	6	4
	PM2.5 Speciation	1	1	1
	PM2.5 continuous	1	4	4
	PM10	1-2	1	2
	Lead	1	0	1
	Carbon Monoxide	0	0	0
	Trace Level Carbon Monoxide	1	1	1
	PAMS	2-4	3	4

[1]Metropolitan Statistical Area, April 8, 2009, United States Census Bureau
http://www.census.gov/popest/counties/CO-EST2008-01.html
[2]No monitor required based on most recent 3-year design value <85% of NAAQS

MSA/CSA Population[1]	MSA	Number of Monitors Currently Required	Number of Existing Monitors	Proposed Network
350,000-1,000,000	*Shreveport*			
	Ozone	2	2	2
	Sulfur Dioxide	0	1	0
	PM2.5 FRM	0[2]	1	1
	PM2.5 continuous	1	1	1
	PM2.5 Speciation	0	1	1
	PM10	0-1	1	1
50,000-350,000	*Lafayette*			
	Ozone	1	1	1
	PM2.5 FRM	0[2]	2	1
	PM2.5 continuous	0[2]	0	1
	PM10	1-2	0	1
50,000-350,000	*Lake Charles*			
	Ozone	1	3	3
	Nitrogen Oxide	0	1	1
	Sulfur Dioxide	0	1	1
	PM2.5 FRM	0[2]	2	2
	PM2.5 continuous	0	1	1
50,000-350,000	*Alexandria*			
	PM2.5 FRM	0[2]	1	1
	PM2.5 continuous	0	0	1

[1]Metropolitan Statistical Area, April 8, 2009, United States Census Bureau
http://www.census.gov/popest/counties/CO-EST2008-01.html
[2]No monitor required based on most recent 3-year design value <85% of NAAQS

MSA/CSA Population[1]	MSA	Number of Monitors Currently Required	Number of Existing Monitors	Proposed Network
50,000-350,000	*Monroe*			
	Ozone	1	1	1
	Sulfur Dioxide	0	1	0
	PM2.5 FRM	0[2]	1	1
	PM2.5 continuous	0	0	1
50,000-350,000	*Houma / Thibodaux*			
	Ozone	1	1	1
	PM2.5 FRM	0[2]	1	1
	PM2.5 continuous	0	1	1
	Other Areas			
50,000-350,000	*Hammond –FRM*	0[2]	1	1
50,000-350,000	*Hahnville – Ozone*	0	1	1
<50,000	*Garyville/LaPlace – Ozone and Lead*	0/1	1/0	1/1
<50,000	*Convent – Ozone*	0	1	1
<50,000	*New Roads - Ozone*	0	1	1

[1]Metropolitan Statistical Area, April 8, 2009, United States Census Bureau
http://www.census.gov/popest/counties/CO-EST2008-01.html
[2]No monitor required based on most recent 3-year design value <85% of NAAQS

Table B. *Special purpose monitors must run for 24 months before they are applicable to the NAAQS.

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Alexandria 22-079-0002	8105 Tom Bowman Dr	Lat = 31.18 Long = -92.41	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	General Background	Regional	Yes	Alexandria
			PM2.5	SPMS	Continuous	Continuous	General Background		No	
Baker 22-033-1001	Hwy 964	Lat = 30.59 Long = -91.21	NOx	SLAMS	Chemilum-inescence	Continuous	General Background	Urban	Yes	Baton Rouge
			Ozone	SLAMS	U.V. Absorption	Continuous	Highest Concentration		Yes	
			VOC	SPMS	Canisters; Trigger Canisters	24 hrs every 6th day; 25 min when triggered	Population Oriented		No	
Capitol 22-033-0009	1061-A Leesville Ave.	Lat = 30.46 Long = -91.18	PM2.5	SLAMS	Sequential FRM	24 hrs every day	High Pop. Density	Neighbor-hood	Yes	Baton Rouge
			PM2.5	SLAMS	Sequential FRM (Collocated)	24 hrs every 12th day	High Pop. Density		Yes	
			PM2.5	SPMS	Continuous	Continuous	High Pop. Density		No	
			PM10	SLAMS	Continuous	Continuous	High Pop. Density		Yes	
			PM2.5	STN	Chemical Speciation	24 hrs every 3rd day	High Pop. Density		No	

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Capitol (cont.)			SO_2	SLAMS	U.V. Fluorescence	Continuous	High Pop. Density	Neighbor-hood	No	Baton Rouge
			Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density		Yes	
			CO	SLAMS	Nondispersive Infrared	Continuous	High Pop. Density		No	
			NOx	SLAMS	Chemilumin-escence	Continuous	High Pop. Density		Yes	
			NOy	PAMS	Chemiluminesence	Continuous	High Pop. Density		No	
			VOC	PAMS	Canisters; Trigger Canisters	8 3-hr samples daily during ozone season and every 6th day otherwise, also 24 hrs every 6th day; 25 min when triggered	High Pop. Density		No	
LSU 22-033-0003	East End Aster Lane	Lat = 30.42 Long = -91.18	NOx	SLAMS	Chemilumin-escence	Continuous	High Concentration	Middle	Yes	Baton Rouge
			Ozone	SLAMS	U.V. Absorption	Continuous	High Concentration		Yes	
			VOC	SPMS	Trigger GC	25 min when triggered	High Concentration		No	

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Bayou Plaquemine 22-047-0009	65180 Belleview Rd.	Lat = 30.22 Long = -91.32	Ozone	PAMS	U.V. Absorption	Continuous	High Concentration	Neighbor-hood	Yes	Baton Rouge
			NOx	PAMS	Chemilumin-escence	Continuous	High Pop. Density		Yes	
			PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	Population Oriented		Yes	
			NOy	PAMS	Chemilumin-escence	Continuous	High Pop. Density		Yes	
			VOC	PAMS	Canisters; Trigger Canisters	4 3-hr samples daily during ozone season and 8 3-hr samples every 6th day otherwise; also 24 hrs every 6th day; 25 min when triggered	Population Oriented		No	
Carlyss 22-019-0002	Hwy 28 & Hwy 108	Lat = 30.14 Long = -93.37	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	Lake Charles

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Carville 22-047-0012	Hwy 141	Lat = 30.22 Long = -91.13	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Regional	Yes	Baton Rouge
			NOx	SPMS	Chemilumin-escence	Continuous	Source Oriented	Neighbor-hood	Yes	
			VOC	SPMS	Trigger GC	25 min when triggered	Source Oriented		No	
Convent 22-093-0002	St. James Courthouse Hwy 44 @ Canatella	Lat = 29.99 Long = -90.82	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	St James
Dixie 22-017-0001	Haygood Rd.	Lat = 32.68 Long = -93.86	Ozone	SLAMS	U.V. Absorption	Continuous	High	Urban	Yes	Shreveport
Dutchtown 22-005-0004	11153 Kling Rd.	Lat = 30.2383 Long = -90.97	Ozone	SPMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	Baton Rouge
			NOx	SPMS	Chemilumin-escence	Continuous	General Background		Yes	
			VOC	PAMS	Canisters; Trigger Canisters	4 3-hour samples daily during ozone season, 24 hours every 6th day; 25 min when triggered	Population Oriented		No	

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
French Settlement 22-063-0002	16627 Perrilloux Ln @ Hwy 16	Lat = 30.32 Long = -90.81	NOx	SLAMS	Chemilumin-escence	Continuous	High Concentration	Neighbor-hood	Yes	Baton Rouge
							General Background			
			Ozone	SPMS	U.V. Absorption	Continuous	High Concentration		Yes	
							General Background			
			PM2.5	SPMS	Continuous	Continuous	General Background		No	
			VOC	SPMS	Canisters; Trigger Canisters	24 hrs every 6th day; 25 min when triggered	Population Oriented		No	
Garyville 22-095-0002	E. Azaela St.	Lat = 30.06 Long = -90.62	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Regional	Yes	St John the Baptist
Geismar 22-047-0005	Hwy 75	Lat = 30.24 Long = -91.06	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Baton Rouge
Grosse Tete 22-047-0007	19145 Sydney Rd.	Lat = 30.40 Long = -91.42	NOx	SPMS	Chemilumin-escence	Continuous	High Concentration	Urban	Yes	Baton Rouge
							General Background			
			Ozone	SPMS	U.V. Absorption	Continuous	High Concentration		Yes	
							General Background			
			VOC	SPMS	Trigger Canisters	25 min when triggered	Population Oriented		No	

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Hammond 22-105-0001	21549 Old Covington Hwy	Lat = 30.50 Long = -90.38	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	New Orleans
			PM2.5	SPMS	Sequential FRM (Collocated)	24 hrs every 12th day	High Pop. Density		Yes	
Hahnville 22-089-0003	1 River Park Drive	Lat = 29.98 Long = -90.36	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	St Charles
Houma 22-109-0001	4047 West Park Ave. at Hwy 24	Lat = 29.68 Long = -90.78	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	New Orleans
Kenner 22-051-1001	100 West Temple Pl.	Lat = 30.04 Long = -90.27	NOx	SLAMS	Chemilumin-escence	Continuous	High Pop. Density	Urban	Yes	New Orleans
			Ozone	SLAMS	U.V. Absorption	Continuous	High Concentration		Yes	
			PM2.5	SLAMS	Sequential FRM	24 hrs everyday	High Pop. Density		Yes	
			PM2.5	SPMS	Continuous	Continuous	High Pop. Density		No	
			VOC	SPMS	Trigger GC	25 min when triggered	Population Oriented		No	

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Lafayette USGS 22-055-0007	700 Cajundome	Lat = 30.2383 Long = -92.04	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Lafayette
			PM2.5	SLAMS	Continuous	Continuous	High Pop. Density		No	
			PM10	SPMS	Continuous	Continuous	High Pop. Denisty		Yes	
			Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density		Yes	
Lake Charles McNeese University 22-019-0010	Common & E. McNeese	Lat = 30.18 Long = -93.21	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Lake Charles
Madisonville 22-103-0002	1421 Hwy 22 West	Lat = 30.43 Long = -90.20	Ozone	SPMS	U.V. Absorption	Continuous	Source Oriented	Neighbor-hood	No*	New Orleans
			PM2.5	SPMS	Continuous	Continuous	Source Oriented		No*	
Marrero 22-051-2001	Patriot & Allo St.	Lat = 29.88 Long = -90.09	PM2.5	SLAMS	Sequential FRM	24 hrs every 6th day	High Pop. Density	Neighbor-hood	Yes	New Orleans
Meraux 22-087-0004	4101 Mistrot Drive	Lat = 29.94 Long = -89.92	Ozone	SPMS	U.V. Adsorption	Continuous	General Background	Urban	No	New Orleans
			SO2	SPMS	U.V. Fluorescence	Continuous	General Background		No*	
			H2S	SPMS	U.V. Fluorescence	Continuous	General Background		No	

*Not comparable because less than three years of data, or not EPA-approved method.

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Meraux (cont.)			VOC	SPMS	Trigger GC	25 min when triggered	General Background		No	
Monroe 22-073-0004	5296 Southwest Rd.	Lat = 32.51 Long = -92.05	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	General Background	Neighbor-hood	Yes	Monroe
			PM2.5	SLAMS	Continuous	Continuous	General Background		No	
			Ozone	SLAMS	U.V. Absorption	Continuous	General Background		Yes	
New Orleans City Park 22-071-0012	Florida & Orleans Ave.	Lat = 29.99 Long = -90.10	PM2.5	SPMS	Continuous	Continuous	High Pop. Density	Neighbor-hood	No	New Orleans
			PM10	SPMS	Continuous	Continuous	High Pop. Denisty		Yes	
			Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density		Yes	
New Roads 22-077-0001	Hwy 415	Lat = 30.68 Long = -91.37	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	Point Coupee
Port Allen 22-121-0001	3758 Hwy 1	Lat = 30.50 Long = -91.21	PM2.5	SLAMS	Sequential FRM	24 hrs every day	High Concentration	Neighbor-hood	Yes	Baton Rouge
			PM2.5	SPMS	Continuous	Continuous	High Concentration		No	
			NOx	SLAMS	Chemilumin-escence	Continuous	High Concentration		Yes	
			Ozone	SLAMS	U.V. Absorption	Continuous	High Concentration		Yes	
			SO2	SLAMS	U.V. Fluorescence	Continuous	High Concentration		Yes	
			VOC	SPMS	Trigger GC	25 min when triggered	Population Oriented		No	

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Pride 22-033-0013	11245 Port Hudson Rd.	Lat = 30.70 Long = -91.05	NOx	PAMS	Chemilumin-escence	Continuous	High Concentration	Neighbor-hood	Yes	Baton Rouge
			Ozone	PAMS	U.V. Absorption	Continuous	High Concentration		Yes	
			PM2.5	SPMS	Continuous	Continuous	High Concentration		No	
			PM10	SLAMS	Continuous	Continuous	High Concentration		Yes	
			VOC	PAMS	Canister; Trigger Canisters	4 3-hr samples every 3rd day ozone season and 8 3-hr samples every 6th day otherwise, also 24 hrs every 6th day; 25 min when triggered	Population Oriented		No	
Shreveport Airport 22-015-0008	1425 Airport Dr.	Lat = 32.53 Long = -93.75	Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density	Neighbor-hood	Yes	Shreveport
			PM2.5	SPMS	Continuous	Continuous	General Background		No	
			PM2.5	SPMS	Chemical Speciation	24 hrs every 6th day	General Background		No	
			PM10	SLAMS	Continuous	Continuous	High Pop. Density		Yes	

Table B. (cont.)

Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Shreveport Calumet 22-017-0008	Midway St.	Lat = 32.47 Long = -93.79	PM2.5	SLAMS	Sequential FRM	24 hrs every 3rd day	High Pop. Density	Neighbor-hood	Yes	Shreveport
			PM2.5	SLAMS	Sequential FRM (Collocated)	24 hrs every 12th day	High Pop. Density		Yes	
Thibodaux 22-057-0004	194 Thorough-bred Park	Lat = 29.76 Long = -90.77	Ozone	SLAMS	U.V. Absorption	Continuous	General Background	Neighbor-hood	Yes	New Orleans
			PM2.5	SPMS	Continuous	Continuous	General Background		No	
Vinton 22-019-0009	2284 Paul Bellow Rd.	Lat = 30.2383 Long = -93.58	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	Regional Transport	Neighbor-hood	Yes	Lake Charles
			Ozone	SPMS	U.V. Absorption	Continuous	General Background		Yes	
Westlake 22-019-0008	2646 John Stine Rd.	Lat = 30.26 Long = -93.28	Ozone	SLAMS	U.V. Absorption	Continuous	High Pop. Density	Neighbor-hood	Yes	Lake Charles
			SO2	SLAMS	U.V. Fluorescence	Continuous	High Pop. Density		Yes	
			NOx	SLAMS	Chemilumin-escence	Continuous	High Pop. Density		Yes	
			PM2.5	SPMS	Continuous	Continuous	High Pop. Density		No	
			VOC	SPMS	Canisters; Trigger Canisters	24 hrs every 6th day; 25 min when triggered	Population Oriented		No	

Table B. (cont.)

Special Purpose Monitors										
Site Name AQS ID #	Address/ Location	Latitude/ Longitude Coordinates	Pollutant Measured	Station Type	Sampling Method	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA Represented
Chalmette Vista 22-087-0007	24 E. Chalmette Circle	Lat = 29.94 Long = -89.98	PM2.5	SPMS	Sequential FRM	24 hrs every 3rd day	Source Oriented	Neighbor-hood	No*	New Orleans
			PM2.5	SPMS	Continuous	Continuous	Source Oriented		No	
			PM10	SPMS	Gravimetric	24 hrs every 6th day	Source Oriented		No*	
			SO_2	SPMS	U. V. Fluorescence	Continuous	Source Oriented		No*	
			H2S	SPMS	U.V. Fluorescence	Continuous	Source Oriented		No	
			VOC	SPMS	Trigger GC	25 min when triggered	Source Oriented		No	
Lake Charles Lighthouse Lane SPECIAL3	Lighthouse Lane & Bayou D'Inde Pass	Lat = 30.22 Long = -93.31	VOC	SPMS	Trigger GC	25 min when triggered	Population Oriented	Neighbor-hood	No	Lake Charles
Southern University 22-033-2002	Isabel Herson St.	Lat = 30.53 Long = -91.19	VOC	SPMS	Trigger GC	25 min when triggered	Source Oriented	Neighbor-hood	No	Baton Rouge

*Not comparable because less than three years of data, or not EPA-approved method.

Table C. New PAMS Network Plan

Site Name	Site Type	Pollutant	Sampling Frequency	Sampling Period
Capitol 22-033-0009	2	Speciated VOC	Eight 3-hr canisters daily (0000, 0300, 0600, 0900, 1200, 1500, 1800, 2100 LST)	June-August
		TNMOC	Hourly	January-December
		NO, NO_2, NO_x	Hourly	January-December
		NOy	Hourly	January-December
		CO (ppb level)	Hourly	January-December
		Ozone	Hourly	January-December
		SO_2 (low level)	Hourly	January-December
		Wind Speed*	Hourly	January-December
		Wind Direction*	Hourly	January-December
		Temperature	Hourly	January-December
		Relative Humidity	Hourly	January-December
		UV Radiation	Hourly	January-December
		Barometric Pres.	Hourly	January-December
		Solar Radiation	Hourly	January-December
		Precipitation	Hourly	January-December
		PM10	Hourly	
Site Name	Site Type	Pollutant	Sampling Frequency	Sampling Period
Bayou Plaquemine 22-047-0009	3/1	Speciated VOC	Four 3-hr canisters daily (i.e. 0300-0600, 0600-0900, 1500-1800, 1800-2100 LST)	June-August
		TNMOC	Hourly	January-December
		NO_y	Hourly	January-December
		Ozone	Hourly	January-December
		Wind Speed*	Hourly	January-December
		Wind Direction*	Hourly	January-December
		Temperature	Hourly	January-December
		Relative Humidity	Hourly	January-December
		Barometric Pres.	Hourly	January-December

		Solar Radiation	Hourly	January-December
Site Name	Site Type	Pollutant	Sampling Frequency	Sampling Period
Bayou Plaquemine (cont.)	3/1	NO, NO_2, NO_x	Hourly	January-December
Pride 22-033-0013	1/3	Speciated VOC	Four 3-hr cans every 3 days (i.e. 0300-0600, 0600-0900, 1500-1800, 1800-2100 LST)	June-August
		TNMOC	Hourly	January-December
		NO, NO_2, NO_x	Hourly	January-December
		Ozone	Hourly	January-December
		Wind Speed*	Hourly	January-December
		Wind Direction*	Hourly	January-December
		Temperature	Hourly	January-December
		Relative Humidity	Hourly	January-December
		Barometric Pres.	Hourly	January-December
		Solar Radiation	Hourly	January-December
Dutchtown 22-005-0004	1/3	Speciated VOC	Four 3-hr canisters daily (i.e. 0300-0600, 0600-0900, 1500-1800, 1800-2100 LST)	June-August
		TNMOC	Hourly	January-December
		NO, NO_2, NO_x	Hourly	January-December
		Ozone	Hourly	January-December
		Wind Speed*	Hourly	January-December
		Wind Direction*	Hourly	January-December

*Wind speed and direction reported to AQS as resultant wind speed and resultant wind direction
Site pictures can be found at http://www.deq.louisiana.gov/portal/tabid/2466/Default.aspx by clicking on the desired location on the site map. The 2008 precision/accuracy report can be found at http://www.deq.louisiana.gov/portal/tabid/2420/Default.aspx.

APPENDIX

NCore Plan
and Self-Assessment

National Core (NCore) Multi-pollutant Monitoring Stations:

In October 2006 the United States Environmental Protection Agency (EPA) issued final amendments to the ambient air monitoring regulations for criteria pollutants. These amendments are codified in 40 CFR parts 53 and 58. The purpose of the amendments was to enhance ambient air quality monitoring to better serve current and future air quality needs. One of the most significant changes in the regulations was the requirement to establish National Core (NCore) multi-pollutant monitoring stations. These stations will provide data on several pollutants at lower detection limits and replace the National Air Monitoring Station (NAMS) networks that have existed for several years. The final network plan must be submitted to EPA by July 1, 2009 and the stations must be operational by January 1, 2011.

The NCore Network addresses the following monitoring objectives:

- timely reporting of data to the public through AIRNow, air quality forecasting, and other public reporting mechanisms
- support development of emission strategies through air quality model evaluation and other observational methods
- accountability of emission strategy progress through tracking long-term trends of criteria and non-criteria pollutants and their precursors
- support long-term health assessments that contribute to ongoing reviews of the National Ambient Air Quality Standards (NAAQS)
- compliance through establishing nonattainment/attainment areas by comparison with the NAAQS
- support multiple disciplines of scientific research, including; public health, atmospheric and ecological

In 2007, EPA provided funding to the Louisiana Department of Environmental Quality (LDEQ) to begin the process of establishing an NCore station in East Baton Rouge Parish. After evaluating the existing network, historical data, census data, meteorology, and topography the LDEQ recommends the following changes to its air monitoring network to become effective January 1, 2011.

Recommended changes to Ambient Air Monitoring Network to accommodate NCore sampling strategy:

1) Establish an NCore multi-pollutant monitoring station in East Baton Rouge Parish at 1061-A Leesville Avenue. The location meets the objective for an NCore site and meets neighborhood scale criteria for $PM_{2.5}$, PM_{10}, Ozone, CO, and NO_x.

2) NOy low level monitor will be added by 2010.

3) Port Allen PM10 monitor will be moved to the Capitol site (not NCore required) by June 30, 2009.

Monitoring Objective:
Determine compliance with NAAQS; observe pollution trends for national data analysis, provide pollution levels for daily index reporting; and provide data for scientific studies.

Table 1 Monitors:

Monitor Type	**Designation**	**Analysis Method**	**Frequency of Sampling**
ARM Carbon Monoxide (CO)	NCore	Automated Reference Method utilizing trace level non-dispersive infrared analysis.	Continuously
ARM Nitrogen Oxide (NO_x)	NCore	Automated Reference Method utilizing chemiluminescence analysis.	Continuously
ARM Ozone (O_3)	NCore/AQI	Automated Equivalent Method utilizing UV photometry analysis.	Continuously
ARM Sulfur Dioxide (SO_2)	NCore	Automated Equivalent Method utilizing trace level UV fluorescence analysis	Continuously
PM10 Continuous		Automated Beta Attenuation Mass Monitor	
FRM $PM_{2.5}$	NCore	Manual Reference Method utilizing gravimetric analysis.	1/3 days
$PM_{2.5}$ Continuous	NCore/AQI	Automated Beta Attenuation Mass Monitor	Continuously
PM_{coarse}	NCore	*Manual Reference Method PM_{10} utilizing differential gravimetric analysis.	1/6 days
$PM_{2.5}$ Speciation	NCore	Multi-species manual collection method utilizing thermal optical, ion chromatography, gravimetric, and X-ray fluorescence analyses.	1/3 days
Total Reactive Nitrogen (NO_y)	NCore	*Automated trace level chemiluminescence analysis.	Continuously
Meteorological	NCore	Air quality measurements approved instrumentation for wind speed, wind direction, humidity, barometric pressure temperature, rainfall, and solar radiation	Continuously

* Pending

Quality Assurance Status:

All Quality Assurance procedures shall be implemented in accordance with 40 CFR 58, Appendix A. LDEQ's current Quality Assurance Project Plan covers $PM_{2.5}$, Ozone, NOx, Speciation, and meteorological measurements. For the trace level instruments, a Quality Assurance Project Plan will be developed and submitted prior to use of the trace level instruments and SOPs have been developed for each new instrument used in the project.

Area of Representativeness:

40 CFR Part 58 Appendix D provides design criteria for ambient air monitoring. The monitoring objective for the NCore site is to produce data that represents a fairly large area and therefore the spatial scale of the site is important. The spatial scale defines the physical dimensions of the air parcel nearest to a monitoring site throughout which actual pollutant concentrations are reasonably similar. It is determined by the characteristics of the area surrounding the air monitoring site and the site's distance from nearby air pollution sources such as roadways, factories, etc. In the case of urban NCore the spatial scales to be used are neighborhood and urban. Table 2 shows the area of representativeness for each pollutant for the Capitol site.

Table 2: Spatial Scales for Each Pollutant

Pollutant	Spatial Scale	Comments
Ozone	Neighborhood Scale	
NO_x	Neighborhood Scale	
Carbon Monoxide	Neighborhood Scale	There is no Urban scale for CO
SO_2	Neighborhood Scale	There is no Urban scale for SO_2
$PM_{10}/PM_{2.5}$	Neighborhood Scale	

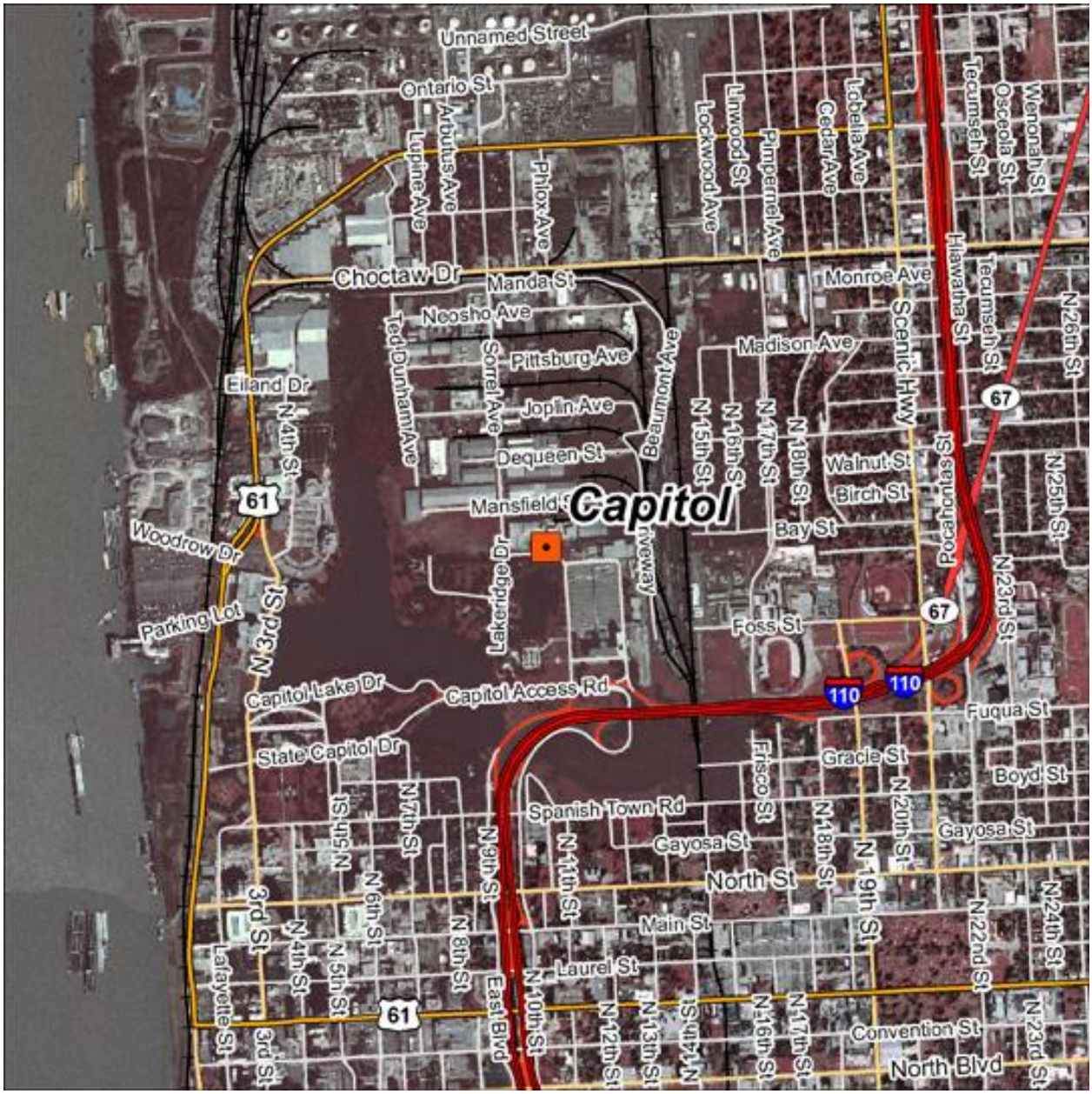
Site Description and Spacing:

CBSA: Baton Rouge, LA MSA
Site Name: Capitol
AQS ID: 22-033-0009
Location: 1061-A Leesville Avenue
Parish: East Baton Rouge
GPS Coordinates: **30° 27' 43.13" N** **91° 10' 45.19" W**
Date Established: August 1, 1982
Site Approval Status: Pending

N

W E

S


Capitol
Unnamed Street
Ontario St
Choctaw Dr
Manda St
Neosho Ave
Pittsburg Ave
Joplin Ave
Dequeen St
Mansfield St
Madison Ave
Monroe Ave
Walnut St
Birch St
Bay St
Foss St
Fuqua St
Gracie St
Boyd St
Gayosa St
Spanish Town Rd
Capitol Lake Dr
Capitol Access Rd
State Capitol Dr
North St
Main St
Laurel St
Convention St
North Blvd
Eiland Dr
Woodrow Dr
Parking Lot
Lafayette St
East Blvd
Scenic Hwy
Hiawatha St
Pocahontas St
Tecumseh St
Osceola St
Wenonah St
Lobelia Ave
Cedar Ave
Pimpernel Ave
Linwood St
Lockwood Ave
Lupine Ave
Arbutus Ave
Phlox Ave
Ted Dunham Ave
Sorrel Ave
Beaumont Ave
Lakeridge Dr
Lakeway
Frisco St
N 4th St
N 3rd St
N 5th St
N 6th St
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N 26th St
61
67
110

NCore Readiness Self-Assessment for State/local/Tribal Agencies

Agency Name: Louisiana Deptartment of Env. Quality Date Prepared: 1/20/2009 By: Sak Supatanasinkasem

A. NETWORK DESIGN

a. Proposed NCore Station #1 ___NEW SITE ___EXISTING SITE AQS #_____
b. Proposed NCore Station #2 ___NEW SITE _x_EXISTING SITE AQS #_22-033-0009_ _ _____
c. Proposed NCore Station #3 ___NEW SITE ___EXISTING SITE AQS #_____

	Item	Criteria	Status	Next Steps
1	Urban or Rural	Largest MSA(s) covered by urban station.	Urban	
2	Scale of Representation	Neighborhood _x_ Urban __ Regional __ Other __	Neighborhood	Neighborhood scale or larger highly recommended.
3	Population Oriented	Yes __ No _x_	High Population Density	Population oriented monitoring highly recommended.
4	Proximity to local emissions sources	No biasing local sources within 500 meters for urban stations. No biasing sources or large urban population centers within 50 km for rural stations.	1mile (1600 meters)	
5	Suitability for meteorological measurements	Distance from obstructions is 10x height of obstruction above station. See Volume IV: Meteorological Measurements Version 1.0 (Draft)	Yes	
6	Information (including site photographs) provided for AMTIC NCore web site	Photographs in 8 cardinal directions needed.	Yes, see http://www.deq.louisiana.gov/portal/tabid/2515/Default.aspx	
7	Station Coordinates	Determined by GPS	Lat 30.46, Long -91.18	
8	Site visited by EPA in past	Meets applicable Appendix D	Yes, unofficial	New sites should be visited

	Item	Criteria	Status	Next Steps
	3 years	and E criteria.		by EPA before final NCore approval is requested
9	Network leveraging	Collocation with other networks encouraged: STN_x Supplemental CSN__ NATTS __ CASTNET __ IMPROVE __ NADP __ PAMS _x_ Other _x_	Yes, PAMS-VOC, STN-speciation	
10	Applicable site fields updated in AQS including coordinates	Consider setting additional monitor type to "Proposed NCore" (station should also be categorized as SLAMS).	Yes; SPMS-PM2.5, SLAMS-PM2.5, SO2, O3, CO, & NOx	
LOGISTICAL CONSIDERATIONS				
11	Site access	Access for at least five years is suggested.	Yes, contract with other state agency	
12	Power requirements and availability	200A service suggested. 240vac service typically needed for a/c. Key power outlets protected by UPS units.	Yes, 200A	
13	Telecommunications	Minimum dial-up service. Broadband service suggested for polling of 1-minute data.	Yes	
14	A/C cooling capacity	Minimum 18,000BTU a/c capacity.	Yes, two 18,000 BTU A/C units	
15	Interior space	Sufficient for minimum of two 19" inner dimension, 6' tall instrument racks and related equipment and accessories, or equivalent shelf space.	Yes, building 10ft wide x 20ft long x 8ft tall interior	

	Item	Criteria	Status	Next Steps
16	Exterior space (roof and accompanying platforms)	Allow for: a) 1m spacing of low-volume PM sampler inlets – up to seven* required plus PEP audit sampler. b) 1m spacing between low-volume PM sampler inlets and gas manifold cane or Teflon tubing. Facilitate usage of TTP audit vehicle or trailer.	Yes, and TTP audit completed 12/2008	
17	10m tower compatibility	Required for meteorological equipment, NOy converter. Room to drop tower for calibrations and audits.	Yes, and ample footprint for audit equipment	

*Notes

1. PM2.5 FRM sampler
2. PM10c FRM sampler for PM10-2.5 mass (dichotomous sampler could substitute for #1 and #2 if future FRM/FEMs available) or PM10-2.5 continuous
3. PM2.5 continuous sampler (does not have to be FEM/ARM)
4. PM2.5 speciation sampler (CSN or IMPROVE)
5. URG sampler for carbon channel (PM2.5 speciation) if using CSN samplers
6. Sampler for PM10-2.5 speciation (unless dichotomous sampler or PM2.5 speciation sampler (spare channels) is used)
7. URG sampler for PM10 carbon speciation (speculative need for PM10-2.5 carbon speciation by difference)

B. REQUIRED PARAMETER/METHODOLOGICAL EVALUATION

d. Proposed NCore Station #1 ___NEW SITE ___EXISTING SITE AQS #_____
e. Proposed NCore Station #2 ___NEW SITE _x_EXISTING SITE AQS #_22-033-0009_ _ _____
f. Proposed NCore Station #3 ___NEW SITE ___EXISTING SITE AQS #_____

	Parameter	Existing Measurements		Future Measurements		Notes
		Sampling Began	Method	Date Expected	New or Relocated	
1	Ozone	8/1/1992	087			Year-round operation (not seasonal)
2	Sulfur dioxide	5/4/2007	560			High sensitivity
3	Carbon monoxide	5/3/2007	554			High sensitivity
4	Nitrogen oxides (NOy)*	8/1/1992 - NOx	074 - NOx	NOy-2010	New	High sensitivity External converter mounted at 10m
5	PM2.5 mass	1/1/1999	118			1-in-3 day FRM/FEM integrated
6	PM2.5 continuous	10/20/2003	715			FEM or ARM preferred but not required
7	PM2.5 speciation	1/1/2001	810			1-in-3 day (Met One & URG 3000N samplers) or IMPROVE
8	PM10-2.5 mass	N/A	N/A	2011	New	Integrated samplers (FRM difference or dichot) or continuous monitor

NCore Readiness Self-Assessment for State/local/Tribal Agencies

Agency Name: Louisiana Deptartment of Env. Quality Date Prepared: 1/20/2009 By: Sak Supatanasinkasem

	Parameter	Existing Measurements		Future Measurements		Notes
		Sampling Began	Method	Date Expected	New or Relocated	
9	PM10-2.5 speciation	N/A	N/A			Details to be provided later (2008) on sampling requirements.
10	Wind speed and direction**	6/1/1993	061			At 10 m
11	Ambient temperature**	6/1/1993	040			At 2 m
12	Relative humidity**	6/1/1993	011			At 2 m
13	Optional – Vertical wind speed, solar radiation, precipitation, barometric pressure, delta-T for 2-10m.	6/1/1993-solar rad 7/24/1997-precip 6/1/1993-barom p	011-solar rad 013-precipitation 015-barometric p			
14	Optional – Ammonia and nitric acid	N/A	N/A			Pilot project using denuders scheduled for 2008-2009.

Notes

* Although the measurement of NOy is required in support of a number of monitoring objectives, available commercial instruments may indicate little difference in their measurement of NOy compared to the conventional measurement of NOx, particularly in areas with relatively fresh sources of nitrogen emissions. Therefore, in areas with negligible expected difference between NOy and NOx measured concentrations, the Administrator may allow for waivers that permit high-sensitivity NOx monitoring to be substituted for the required NOy monitoring at applicable NCore sites.

** EPA recognizes that, in some cases, the physical location of the NCore site may not be suitable for representative meteorological measurements due to the site's physical surroundings. It is also possible that nearby meteorological measurements may be able to fulfill this data need. In these cases, the requirement for meteorological monitoring can be waived by the Administrator.

NCore Readiness Self-Assessment for State/local/Tribal Agencies

Agency Name: Louisiana Deptartment of Env. Quality Date Prepared: 1/20/2009 By: Sak Supatanasinkasem

C. **SUPPORTING EQUIPMENT EVALUATION**

a. Proposed NCore Station #1 ___NEW SITE ___EXISTING SITE AQS #_____

b. Proposed NCore Station #2 ___NEW SITE _x_EXISTING SITE AQS #_22-033-0009_ _ _____

c. Proposed NCore Station #3 ___NEW SITE ___EXISTING SITE AQS #_____

	Item	Criteria	Status	Next Steps
1	Calibrator (field)	Suitable for trace-level dilutions, see Appendix A audit concentrations. Capable of automated QC checks. Internal O3 generator – photometer preferred.	Yes; API 700	
2	Calibrator (lab or field)	Suitable for generation of MDL-level concentrations	Yes	
3	Zero Air Source	Compliant with TAD recommendations. Ultra-pure air cylinder recommended for occasional comparison to zero air source. Capacity for 20+ LPM of dilution air.	Yes; API 701	
4	Data acquisition system	Digital-capable system	Yes; ESC 8816	
5	Gas cylinder standards	Suitable for trace-level dilutions, see Appendix A audit concentrations, EPA Protocol certifications. Special low-level standards needed for MDL concentrations (CO, SO2, NOy)	Yes; CO 5ppm, SO2 10ppm, NO 20ppm	
6	Meteorological calibration devices	Provide NIST traceability of required meteorological parameters.	Yes	
7	Sampling manifold	Per Appendix E. Residence time <20 seconds, only glass or Teflon materials, probe and monitor inlets acceptable heights.	Yes	
8	Auditing equipment	Independent calibrator, zero air source and gas standards compatible with trace level specifications. Independent meteorological and flow standards, it not already available.	Yes; subcontract trace CO, trace SO2, O3, NO2, PM2.5, and PM2.5 speciation	

D. ORGANIZATIONAL FACTORS

	Item	Criteria	Status	Next Steps
1	Training considerations	Key monitoring personnel have attended OAQPS provided monitoring workshops or equivalent training.	Yes, most recent NCORE training in Dallas in September 2008	
2	Monitoring station documentation	NCore station(s) described in Annual Monitoring Network Plan.	Yes, described in 2008 Louisiana Annual Network Assessment Plan	Must be included in plan due on or before July 1, 2009. Discuss siting with health researchers and other data stakeholders.
3	Section 103 funds received and obligated for equipment purchases	N/A	N/A	Work with EPA Regional contacts.